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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/644,640	08/20/2003	Sung Dug Kim	135680-1	7530

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EXAMINER	
ROBERTSON, JEFFREY	
ART UNIT	**PAPER NUMBER**
1712	

DATE MAILED: 09/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/644,640	KIM ET AL.	
	Examiner	Art Unit	
	Jeffrey B. Robertson	1712	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 July 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *1004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. The information disclosure statement of 10/20/04 includes an international search report that lists a number of X references. It is noted that U.S. Patent No. 6,187,848 is applied below. Regarding the other X references listed. None of those references teaches the stabilizer combination or the presence of a difunctional epoxy compound as required by the present claims.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 3, 4, and 9-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gallucci et al. (U.S. Patent No. 6,300,399) in view of Gallucci et al. (U.S. Patent No. 5,596,049) and Fromuth et al. (U.S. Patent No. 4,264,487).

The '399 patent teaches a polyester molding composition that comprises a thermoplastic polyester resin that is an alkylene aryl polyester and an impact modifier. Col. 2, lines 9-60. Here, for claims 3 and 4, the reference teaches polyesters such as PET. The '399 patent teaches core-shell polymers as the impact modifier in column 3, lines 63-65. The '399 patent teaches antioxidants that include hindered phenol, phosphite, phosphonite, and thioesters. The reference prefers that these antioxidants be used in combination with one another. Col. 4, lines 58-62. Therefore, it would have

been obvious to use a combination of antioxidants as required by claim 1. For claim 16, the reference teaches the addition of glass fiber in col. 4, line 54. For claims 19 and 20, the '399 patent teaches that articles for electrical equipment are made. Col. 6, lines 10-52.

The '399 patent fails to expressly teach core-shell polymers where the core is derived from an acrylate having 4-12 atoms or the addition of a difunctional epoxy compound.

For claims 1 and 11-15, the '049 patent teaches the addition of difunctional epoxy compounds and catalysts to polyester molding compositions in order to improve hydrolytic stability and melt viscosity. Col. 2, lines 47-54. The reference teaches that the epoxy compound is bis(3,4-epoxycyclohexylmethyl) adipate, catalysts including alkali metal salts of carboxylic acids, and that the catalyst is added in an amount of 0.01 to 1 weight percent. Col. 5, line 15 through col. 6, line 13.

For claims 9 and 10, Fromuth teaches core-shell polymers falling within applicant's definition in col. 2, line 58 through col. 3, line 15. Fromuth teaches that butylacrylate is used in col. 4, line 36. The size of the acrylic rubber is believed to be an inherent property of the cores when synthesized in this manner.

The '399 patent, the '049 patent, and Fromuth are analogous art in that they all teach polyester molding compositions containing impact modifiers and other additives. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the diepoxy compounds and catalysts of the '049 patent in the compositions of the '399 patent. The motivation would have been that the '049 patent teaches that these

additives improve hydrolytic stability and melt viscosity. It also would have been obvious to one of ordinary skill in the art at the time of the invention to substitute the core-shell polymers taught in Fromuth in the compositions of the '399 patent. The motivation would have been that Fromuth teaches advantages of the core-shell polymers in the patent in terms of thermal stability in col. 1, lines 33-47.

For claims 17 and 18, the references fail to teach the properties set forth in these claims. However, it appears that these properties would be inherent to the compositions produced through the combination of references as described above. "[T]he PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his [or her] claimed product. Whether the rejection is based on inherency' under 35 U.S.C. 102, on prima facie obviousness' under 35 U.S.C. 103, jointly or alternatively, the burden of proof is the same...[footnote omitted]." The burden of proof is similar to that required with respect to product-by-process claims. In re Fitzgerald, 619 F. 2d 67, 70, 205 USPQ 594, 596 (CCPA 1980) (quoting In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433-34 (CCPA 1977)).

4. Claims 1-4, and 9-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fromuth et al . (U.S. Patent No. 4,264,487) in view of Gallucci et al. (U.S. Patent No. 5,596,049).

Fromuth teaches a polyester molding composition that comprises a thermoplastic polyester resin that is an alkylene aryl polyester in an amount of 25-95% and an impact modifier. Col. 1, line 58 through col. 2, line 2 and lines 36-37. Here, for claims 3 and 4,

the reference teaches polyesters such as PET. Fromuth teaches oxidation stabilizers that include hindered phenol, and heat stabilizers that contain esters of phosphoric acid and phosphinic acid, and thioesters. It would have been obvious to use a combination of heat stabilizers including thioesters and phosphates as required by claim 1. It is prima facie obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose. . . . [T]he idea of combining them flows logically from their having been individually taught in the prior art." *In re Kerkhoven*, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980)

For claims 9 and 10, Fromuth teaches core-shell polymers falling within applicant's definition in col. 2, line 58 through col. 3, line 15. Fromuth teaches that butylacrylate is used in col. 4, line 36. The size of the acrylic rubber is believed to be an inherent property of the cores when synthesized in this manner.

For claim 16, the reference teaches the addition of glass fiber in col. 4, lines 5-26.

For claims 19 and 20, Fromuth teaches that articles are made. Col. 3, lines 31-34. Fromuth fails to expressly teach the addition of a difunctional epoxy compound.

For claims 1 and 11-15, the Gallucci teaches the addition of difunctional epoxy compounds and catalysts to polyester molding compositions in order to improve hydrolytic stability and melt viscosity. Col. 2, lines 47-54. Gallucci teaches that the epoxy compound is bis(3,4-epoxycyclohexylmethyl) adipate added in an amount of 0.1 to 5% by weight, catalysts including alkali metal salts of carboxylic acids, and that the

catalyst is added in an amount of 0.01 to 1 weight percent. Col. 5, line 15 through col. 6, line 13.

Fromuth and Gallucci are analogous art in that they teach polyester molding compositions containing impact modifiers and other additives. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the diepoxy compounds and catalysts of Gallucci in the compositions of Fromuth. The motivation would have been that Gallucci teaches that these additives improve hydrolytic stability and melt viscosity.

For claims 17 and 18, the references fail to teach the properties set forth in these claims. However, it appears that these properties would be inherent to the compositions produced through the combination of references as described above. "[T]he PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his [or her] claimed product. Whether the rejection is based on inherency' under 35 U.S.C. 102, on prima facie obviousness' under 35 U.S.C. 103, jointly or alternatively, the burden of proof is the same...[footnote omitted]." The burden of proof is similar to that required with respect to product-by-process claims. In re Fitzgerald, 619 F. 2d 67, 70, 205 USPQ 594, 596 (CCPA 1980) (quoting In re Best, 562 F.2d 1252, 1255, 195 USPQ 430, 433-34 (CCPA 1977)).

For claim 2, Fromuth teaches the addition of a mold release in col. 3, line 38. Although Fromuth does not expressly teach the amounts of (d), (e), (f), and (h). These appear to be result effective variables dependent on the amount of mold release, thermal and oxidation stability desired. A result effective variable is determined

according to the desired properties of the resulting composition and would be obvious to one of ordinary skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

5. Claims 5-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gallucci et al. (U.S. Patent No. 6,300,399) in view of Gallucci et al . (U.S. Patent No. 5,596,049) and Fromuth et al. (U.S. Patent No. 4,264,487) as applied to claim 1 above, and further in view of Pixton et al. (U.S. Patent No. 6,187,848).

The limitations of claim 1 are taught as explained above. The '399 patent fails to expressly teach the limitations of claims 5-8.

Pixton teaches polyester molding compositions that contain stabilizers similar to those taught above. Pixton teaches the specific thioesters required by claims 5 and 6 in col. 5, lines 13-60. Pixton teaches the phosphonites required by claims 7 and 8 in col. 6, lines 1-25.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the thioester and phosphonite stabilizers set forth by Pixton as the specific stabilizers set forth in the '399 patent. The motivation would have been that the '399 patent teaches the genus of each of these stabilizers, but does not teach specific species. One of ordinary skill in the art would have turned to Pixton for that information.

6. Claims 5-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fromuth et al. (U.S. Patent No. 4,264,487) in view of Gallucci et al. (U.S. Patent No.

5,596,049) and as applied to claim 1 above, and further in view of Pixton et al. (U.S. Patent No. 6,187,848).

The limitations of claim 1 are taught as explained above. Fromuth fails to expressly teach the limitations of claims 5-8.

Pixton teaches polyester molding compositions that contain stabilizers similar to those taught above. Pixton teaches the specific thioesters required by claims 5 and 6 in col . 5, lines 13-60. Pixton teaches the phosphonites required by claims 7 and 8 in col. 6, lines 1-25.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the thioester and phosphonite stabilizers set forth by Pixton as the specific stabilizers set forth by Fromuth. The motivation would have been that the '399 patent teaches the genus of each of phosphorus stabilizers, but does not teach specific species. One of ordinary skill in the art would have turned to Pixton for that information. Regarding the thioester, Fromuth gives only one example of thioesters. The thioesters taught by Pixton are equivalents to this. It is prima facie obvious to substitute equivalents, motivated by a reasonable expectation that the respective species will behave in a comparable manner or give comparable results in comparable circumstances. In re Ruff 1 18 USPQ 343, In re Jezel 158 USPQ 99; the express suggestion to substitute one equivalent for another need not be present to render the substitution obvious. In re Font, 213 USPQ 532.

Response to Arguments

7. Applicant's arguments filed 7/8/05 have been fully considered but they are not persuasive.

Applicant first argues that the examples set forth in the specification show the uniqueness of the combination set forth in the claims as compared to the comparative examples that have two of the required stabilizers or all three stabilizers and a different impact modifier. The examiner does not find this argument persuasive because in the comparative examples containing two stabilizers instead of the required three stabilizers, the amount of total stabilizer is much less than the amount of stabilizer where all three stabilizers are present. Therefore, it is not known if the effects obtained are due to the increased amount of stabilizer or the identity of the stabilizers. Regarding the examples with all three stabilizers with a different impact modifier, the examiner does not find this argument persuasive due to the specific advantages set forth for the core-shell impact modifiers as set forth in the Fromuth reference and detailed above.

Regarding applicant's comments in the first paragraph of page 7 of the response, the examiner does not find these arguments persuasive because it is not clear if the additional examples referred to by applicant are before the examiner.

Applicant argues that the Gallucci '399 reference does not expressly teach the claimed combination of stabilizers and that there are other combinations of stabilizers that would be present in the reference that do not fall within the scope of the present claims. As a result, applicant argues that the claimed combination would not have been obvious to one of ordinary skill in the art. The examiner disagrees in view of the

comments made above and in view of the fact that Gallucci prefers combinations of the named three stabilizers. Applicant additionally argues that Gallucci teaches a variety of impact modifiers and prefers an impact modifier not claimed. The examiner does not find this argument persuasive in view of the teachings of the Fromuth reference, which discloses the advantages of core-shell impact modifiers over other impact modifiers.

Regarding applicant's arguments pertaining to the rejection of claims 1-4 and 9-20 over Fromuth in view of Gallucci, the examiner does not find these arguments persuasive in view of the comments set forth above. In addition, Fromuth does teach different benefits for the addition of hindered phenols (oxidation stabilizer) and phosphates/thioesters (heat stabilizers). Therefore, there is additional motivation for adding combinations of these stabilizers. In light of these comments, the rejections as set forth above have been continued.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

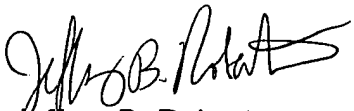
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey B. Robertson whose telephone number is (571) 272-1092. The examiner can normally be reached on Mon-Fri 7:00-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy P. Gulakowski can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jeffrey B. Robertson
Primary Examiner
Art Unit 1712

JBR